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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,426	10/18/2001	Peter Wierach	64251-034	6662
7590	07/15/2004		EXAMINER	
Robert E. Muir Husch & Eppenberger, LLC Suite 1400 401 Main Street Peoria, IL 61602-1241			BUDD, MARK OSBORNE	
			ART UNIT	PAPER NUMBER
			2834	
DATE MAILED: 07/15/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/982,426	<b>Applicant(s)</b> WIERACH, PETER	
	<b>Examiner</b> Mark Budd	<b>Art Unit</b> 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4,6 and 8-30 is/are pending in the application.
- 4a) Of the above claim(s) 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,6 and 8-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                        |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.   |

Claims 1, 4, 6, 8-12, and 21-30 are rejected under 35 USC 103 as unpatentable over item or Lazarus in view of Dvorsky or Crawley.

Item (Figs. 1, 2, 7, 6) and Lazarus (Fig. 2A-C) teach an electrode piezo element laminated between insulating sheets with lead electrodes thereon and spacer layer. They do not explicitly use a fiber reinforced insulator or some of the particular electrode materials claimed. However, both Dvorsky and Crawley teach using fiber reinforced insulating encapsulation materials to increase the strength of piezoelectric transducers. The specific wire mesh and woven fabric electrode materials are known per se (official notice taken). Since it has long been held that selection from among known suitable materials is within the skill expected of the routineer, use of these specific materials based on their known attributes would have been obvious to one of ordinary skill in the art. Note that both Dvorsky and Crawley from their laminated structure via using a prepreg of fiberglass cloth and epoxy which is consequently heated under pressure to eliminate all voids and provide a unitary structure. In an alternate method discussed by Dvorsky (col. 4, line 46-col. 5 line 3) the glass cloth is filled with two part room curing epoxy and placed in a vacuums to insure complete impregnation. Thus leaving a unified body. These processes yield an equivalent, if not identical finished body as an injection-molded device would have been would have that is to say, layers of reinforcing fibers in a matrix of epoxy resin.

Regarding applicants remarks, while it is true there is no prohibition of including method terminology in an article claim, it is also true that such an inclusion is not generally given patentable weight. Courtz have indicated that an article must stand or

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fall on its own merits and not by the process of its manufacture. It is also noted that Iten, figs. 1 and 2 show lead electrodes #4, #5, coextensive with electrodes numbered 6 and 7. Thus Iten doesn't teach electrodes larger than the leads. Noting Lazarus, does not explicitly illustrate an electrode with over lapping leads. However, Lazarus does explicitly note that the piezo material "may have metal coated on one or more surfaces to act as electrode" (see col. 6, lines 1-18). Due to the responses designed into Lazarus, any electrode patterns would need to be identical to those shown for the lead metalizations in order to provide an operable device. In other words, the lead metalizations would be co-extensive with any electrode patterns.

The examiner assumes the woven elastic issue as being conceded to be well known (as stated in the previous final office action (12-22-03)). Since applicants did not address this issue in the response filed 3-22-04. However, note Stein, fig. 3, woven carbon fiber #4, #6; Reidel, fig. 2, flexible grid mesh; Binding, knitted wire, Bast, figs. 3-5, woven wire fabric Zimnicki, figs. 5 7 6, woven grids. Each of these structures is both woven and elastic.

Budd/ds

07/06/04

MARK A. BUDD  
PRIMARY EXAMINER  
ART UNIT 2834